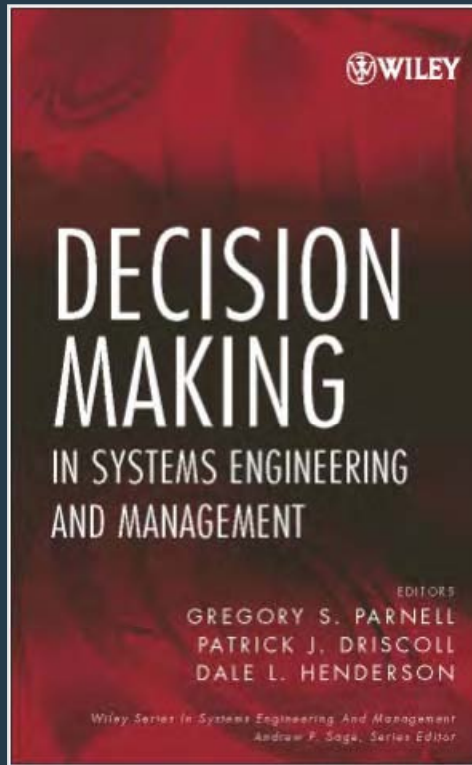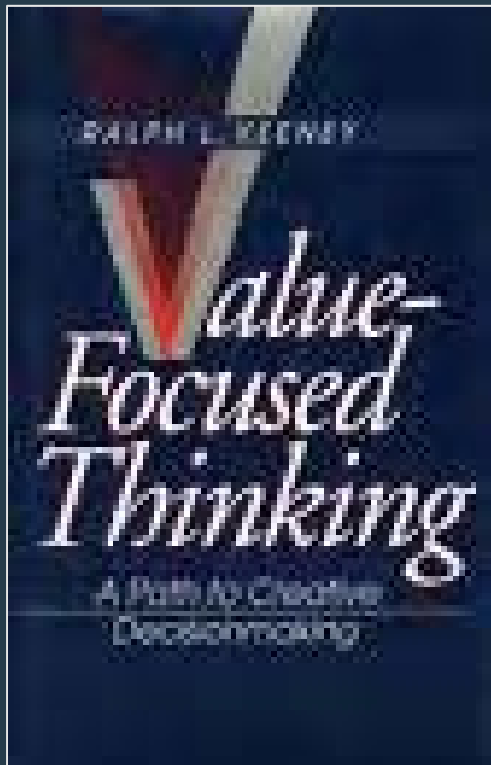# Value-Focused Thinking:

Providing Structure in Soft Personnel Problems to Enhance Mentoring, Discussion, and Decisions

MAJ Rob Dees
MAJ Sam Huddleston

Task: Provide a tutorial in the leading methodology for making decisions with multiple competing objectives, demonstrate usefulness for modeling of preferences in soft problems requiring structure, and describe recent successes in the personnel arena.

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The Components of Our Approach

- A Qualitative Value Model: Identifying the *Performance Attributes* That Our Leaders Value

- An End-State Metric of Performance: Measuring the *Demonstrated Performance* of Those We Have

- Strategic Applications

  "What I want is to improve the quality of the Soldiers we have while reducing the dollars we spend to get that quality"

  LTG Freakley, Accessions Command

- Statistical Learning: Linking *Demonstrated Performance* to *Performance Attributes* and *Profiles of Potential*

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Philosophy and Motivation

Basic Philosophy from Keeney's Book:

- ✓ "**Values** are what we care about. As such, **values** should be the driving force for our decision-making."
- ✓ "Decision-making usually focuses on the choice among **alternatives**."
- ✓ "**Alternatives** are the means to achieve the more fundamental **values**."
- ✓ "**Value-Focused Thinking** essentially consists of two activities: first deciding what you want and then figuring out how to get it."

Motivation from Respected Thinkers:

- ✓ "The perfection of means and confusion of ends seem to characterize our age."

  -Albert Einstein

- ✓ "When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of science."   *-Lord Kelvin*

- ✓ "There is no greater impediment to the advancement of knowledge than the ambiguity of words."

  -Thomas Reid

Motivation for use in "Soft" Personnel Decisions:

- ✓ "Many hiring decisions start off on the wrong foot because the company hasn't clarified exactly what it wants from the new hire."

  -Hiring and Keeping the Best People, Harvard Business Essentials

Current Military Application Areas

- ✓ Major acquisition decisions
- ✓ Evaluate courses of action
- ✓ Improve current systems
- ✓ Evaluate future concepts
- ✓ Analyze force mix
- ✓ Justify resource allocation
- ✓ Reduce risk
- ✓ Allocate training time
- ✓ Strategic assessments

Why not personnel decisions?

See Details At: Parnell, Gregory S. (2007). *Ch. 19, Value-Focused Thinking*. Published in *Methods for Conducting Military Operational Analysis: Best Practices Throughout the Department of Defense*, Military Operations Research Society, Editors Loerch, A. & Rainey, L.

Benefits of Value-Focused Thinking

Thinking About Values

- Creating Alternatives
- Identifying Decision Opportunities
- Uncovering Hidden Objectives
- Guiding Strategic Thinking
- Evaluating Alternatives
- Inter-Connecting Decisions
- Improving Communication
- Guiding Information Collection
- Facilitating Involvement
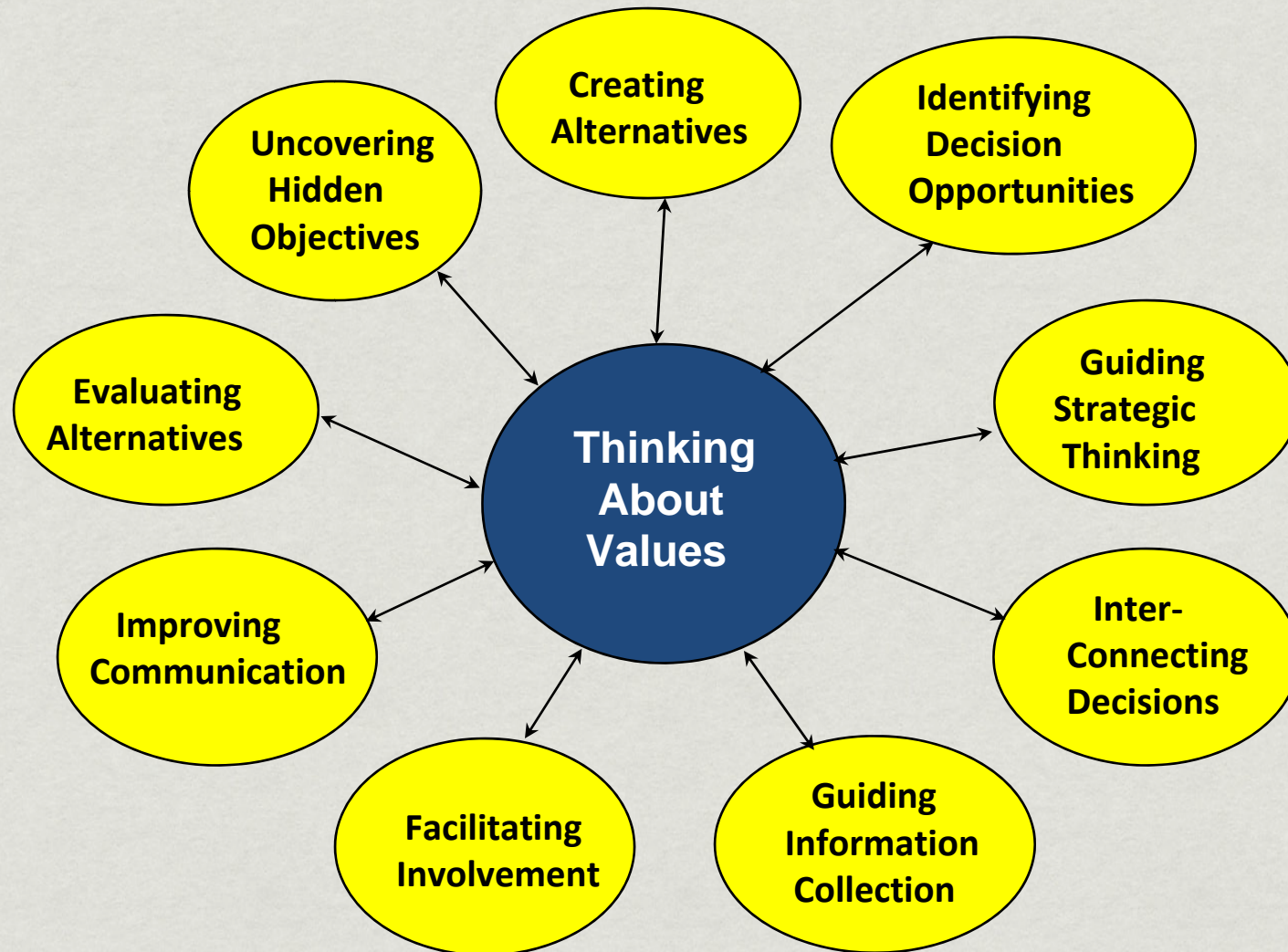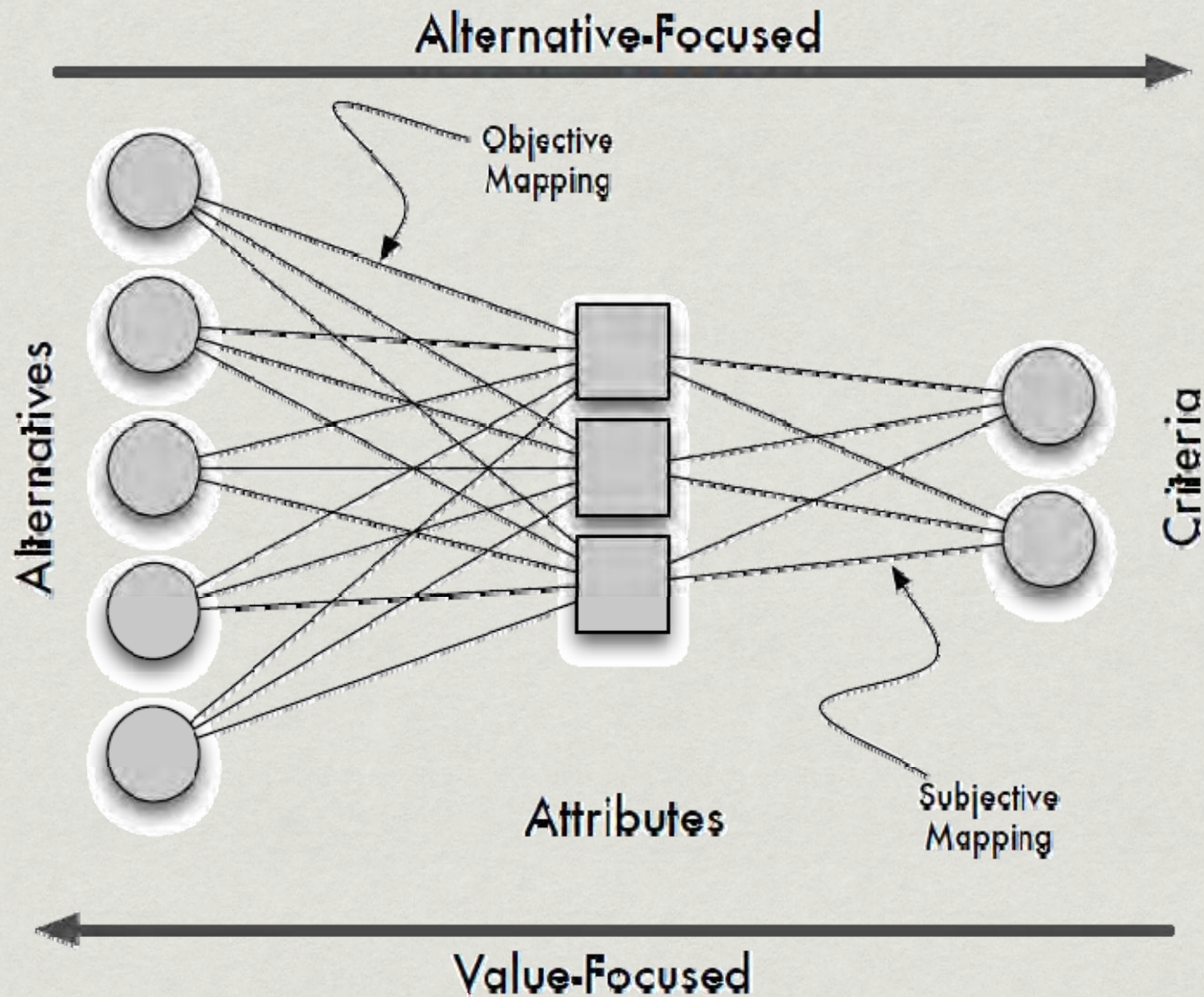
We need these benefits in soft personnel problems.
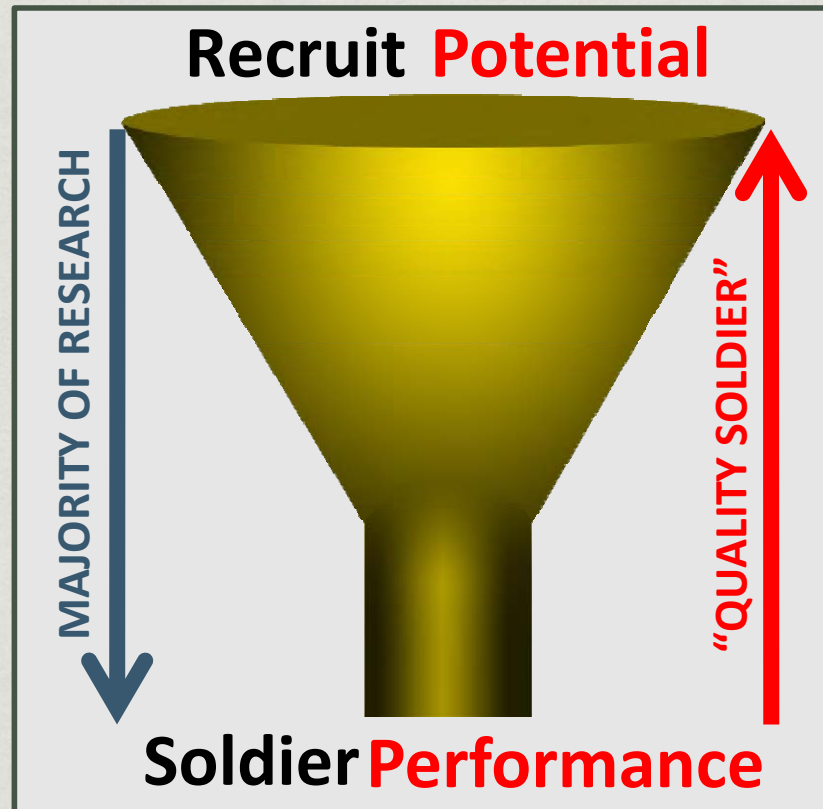
Alternative vs. Value-Focused Thinking

Difference of Approach

Longitudinal Study

- High Cost
- Long Duration
- Collect massive amounts of data on what we think might solve the problem, and see if something useful is revealed over time.
- "We'll see in the end."

Recruit Potential

MAJORITY OF RESEARCH

"QUALITY SOLDIER"

Soldier Performance

Value-Focused Study

- Low Cost
- Short Duration
- First determine "what we want."
- Collect focused data and make inferences on the larger population.
- "Begin with the end in mind." - *Stephen Covey*

"Many hiring decisions start off on the wrong foot because the company hasn't clarified exactly what it wants in the new hire."

- Hiring and Keeping the Best People, Harvard Business Essentials, p. 6.

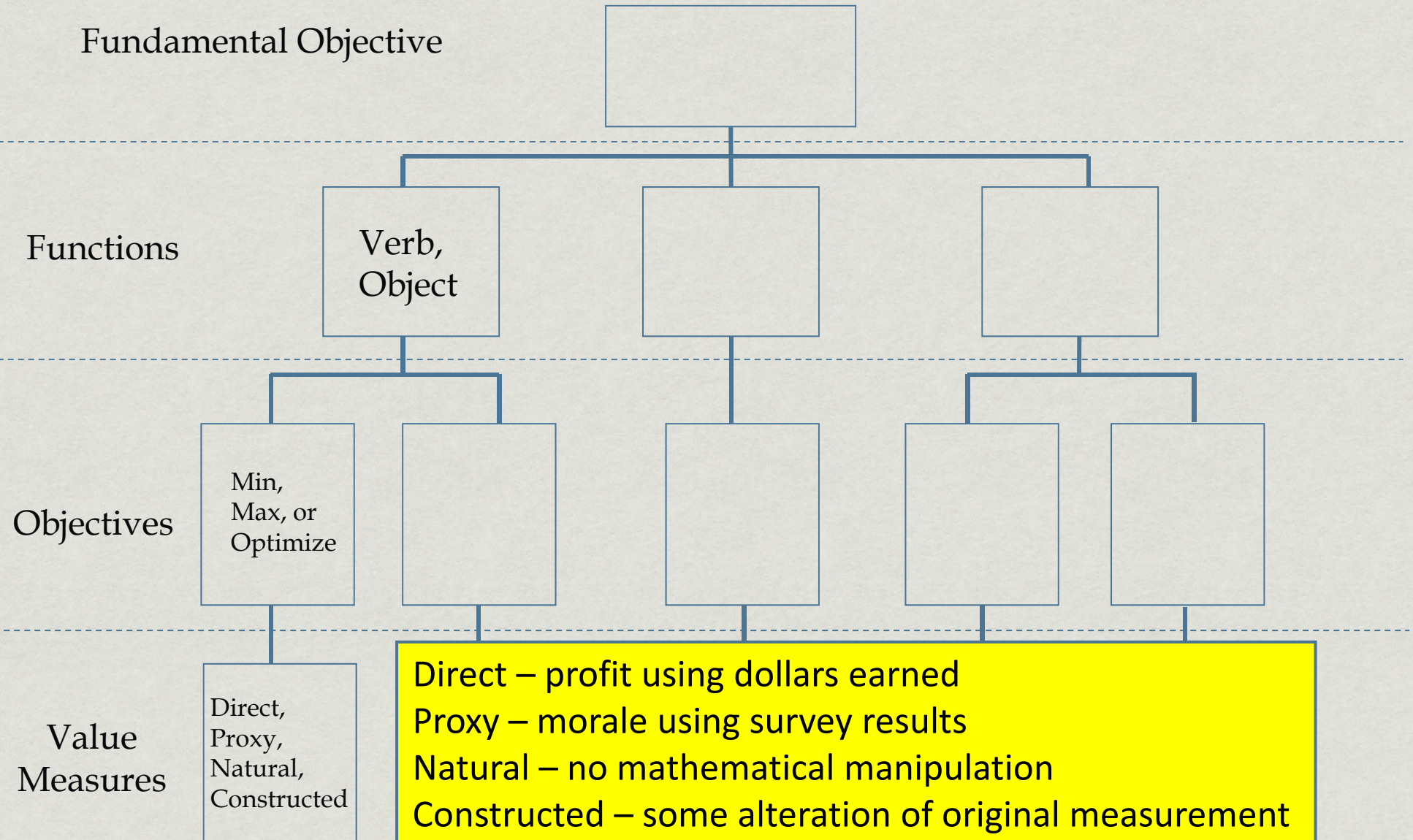*"The perfection of means and confusion of ends seems to characterize our age."* - *Einstein*

Both are needed, but value-focused studies or "what we want" should inspire longitudinal studies.

Methodology

1. We face a problem with <u>multiple, competing objectives</u> and develop a ***qualitative value model*** (value hierarchy).

Fundamental Objective		☐	
Functions	Verb, Object	☐	☐
Objectives	Min, Max, or Optimize	☐	☐ ☐
Value Measures	Direct, Proxy, Natural, Constructed		

Direct – profit using dollars earned
Proxy – morale using survey results
Natural – no mathematical manipulation
Constructed – some alteration of original measurement

Example Fundamental Objective

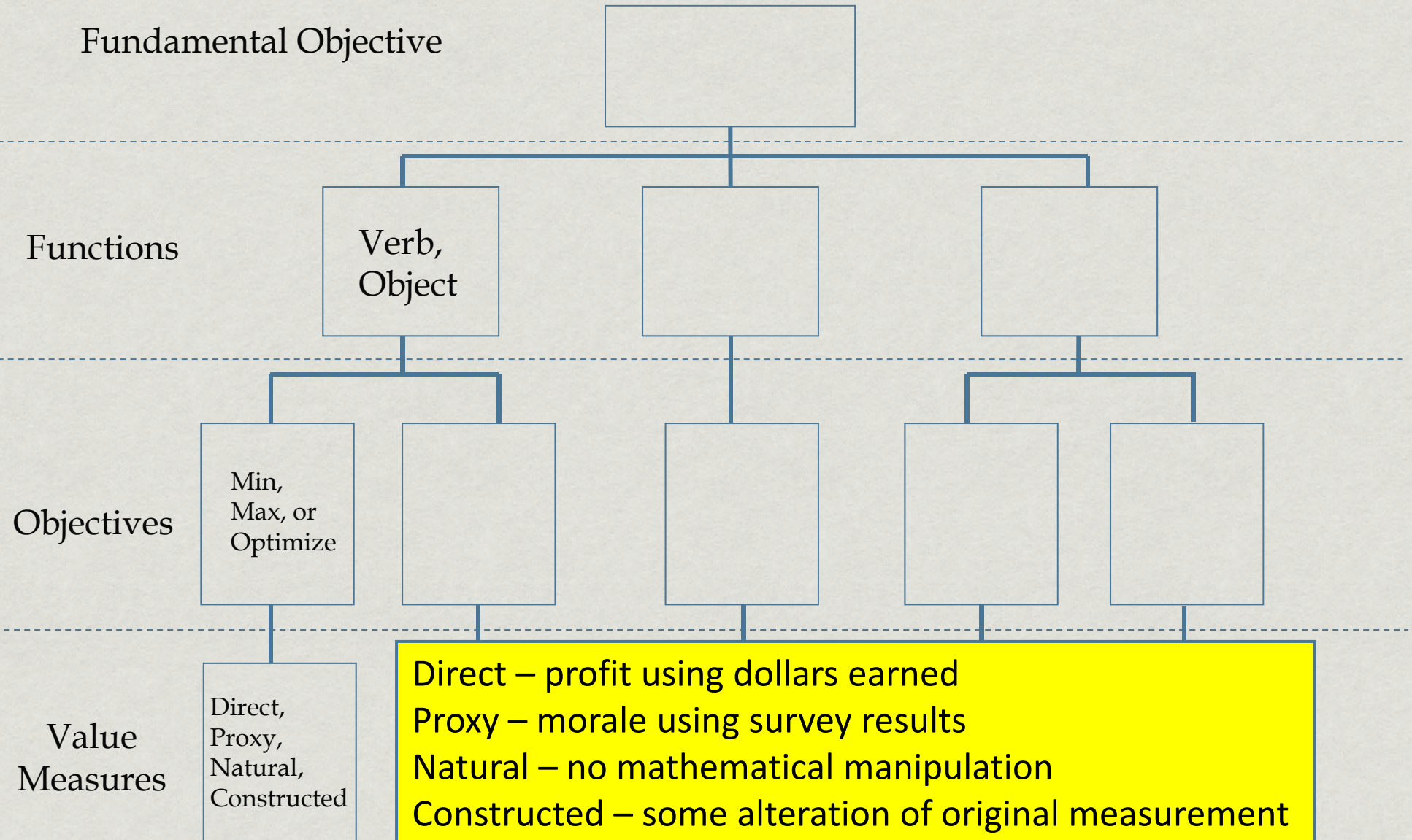***The Mission of the United States Military Academy:***

To educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned leader of character committed to the values of Duty, Honor, Country and prepared for a career of professional excellence and service to the Nation as an officer in the United States Army."

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Affinity Diagramming
Identifying the functions that matter

- ♦ "Silent brainstorming"

- ♦ List a single system function on a "sticky"

- ♦ Post the function on a board

- ♦ Rearrange functions as you see natural groups appear

- ♦ When complete, label the groupings

PRACTICAL EXERCISE: Officer Performance at Company Level

Methodology

1. We face a problem with <u>multiple, competing objectives</u> and develop a ***qualitative value model*** (value hierarchy).

2. For every value measure in our value hierarchy, we develop ***screening criteria*** that indicate our <u>minimum acceptable</u> and <u>ideal</u> levels.

3. For every value measure, we develop ***swing weights*** to reflect the <u>relative importance</u> of value measures across their <u>ranges of variation</u>. These swing weights must sum to 1, or account for 100% of value.

4. For every value measure, we develop ***value functions*** that reflect <u>returns to scale</u> between our minimum acceptable and ideal levels.

Methodology

Single dimensional value functions set a "common currency" for all value measures and reflect our preferences across the possible range for each value measure.
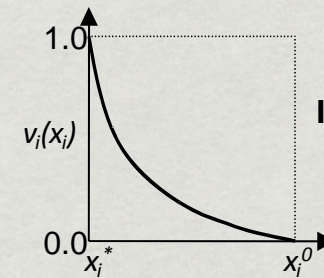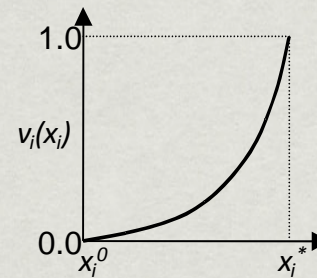
- Four shapes are common

- Value functions may be continuous or discrete.

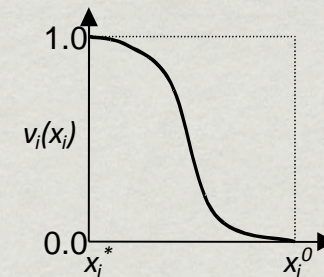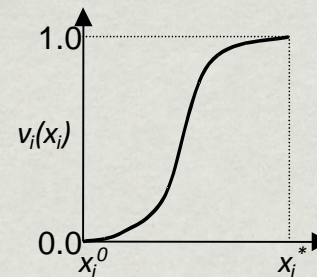- Value functions are usually scaled from
  - 0 to 1
  - 0 to 10
  - 0 to 100
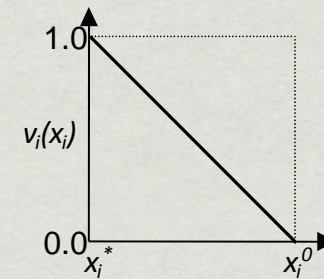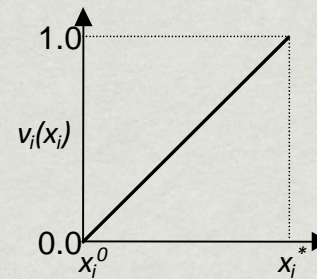
Linear Returns to Scale (RTS)
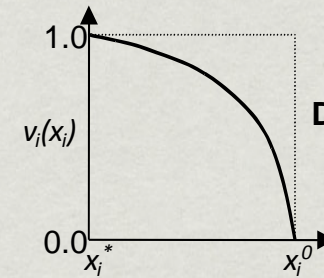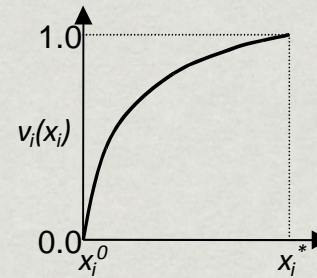
Decreasing RTS (concave)

Increasing RTS (convex)

S-curve

Methodology

1. We face a problem with <u>multiple, competing objectives</u> and develop a ***qualitative value model*** (value hierarchy).

2. For every value measure in our value hierarchy, we develop ***screening criteria*** that indicate our <u>minimum acceptable</u> and <u>ideal</u> levels.

3. For every value measure, we develop ***swing weights*** to reflect the <u>relative importance</u> of value measures across their <u>ranges of variation</u>.

4. For every value measure, we develop ***value functions*** that reflect <u>returns to scale</u> between our minimum acceptable and ideal levels.

5. The **additive value model** is the most commonly used to evaluate and compare alternatives:

$$V(\mathbf{x}) = \sum_{i=1}^{n} w_i v_i(x_i)$$

where *V(x)* is the <u>total value</u> for an alternative,

w_i is the <u>swing weight</u> of the ith value measure,

$v_i(x_i)$ is the <u>value function</u> for the ith value measure,

x_i is the <u>measure score</u> of an alternative on the ith value measure.

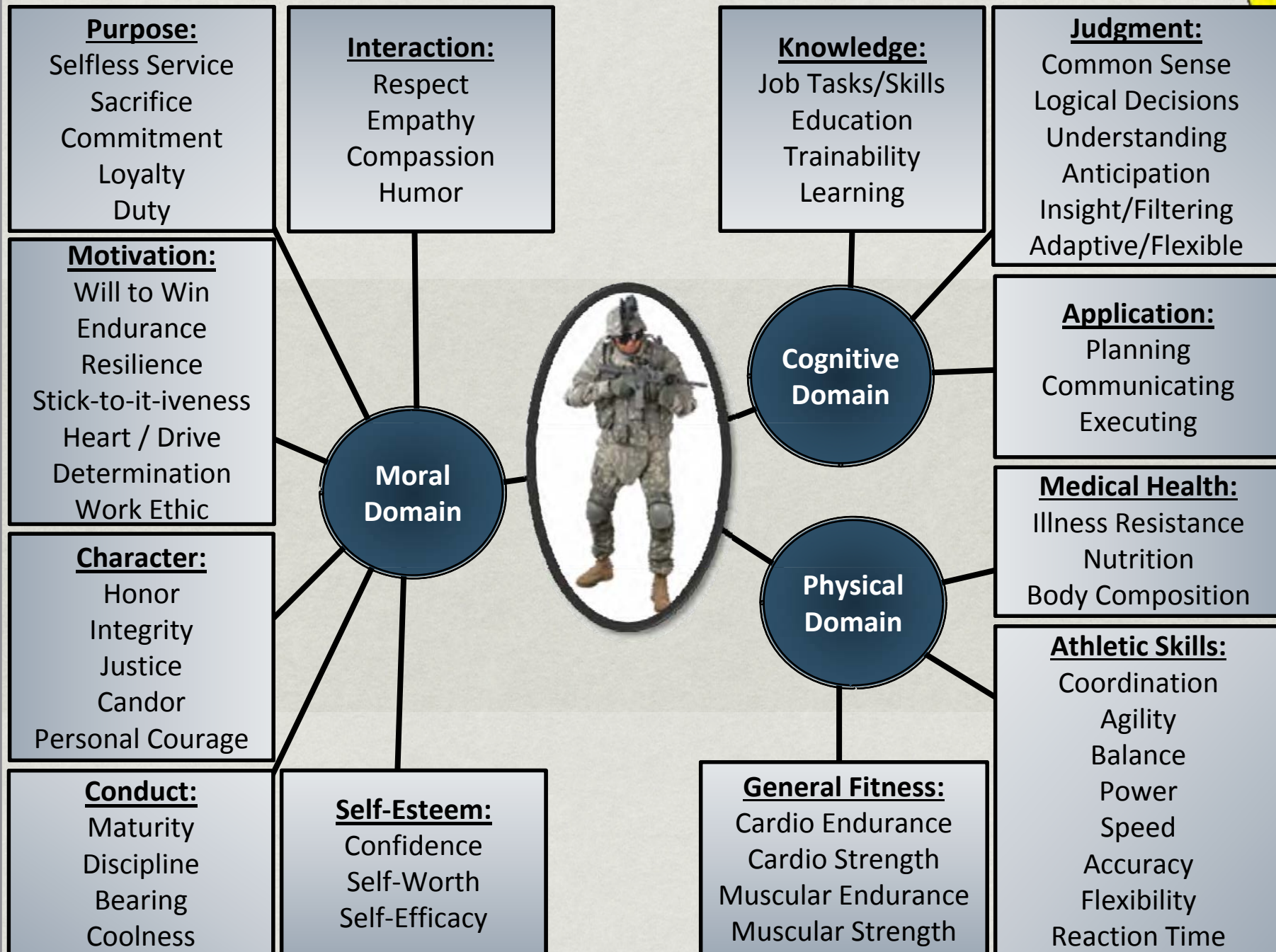# 10 Minute Break

Results of Affinity Diagram Exercise

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WholeSoldier Performance Model

Purpose:
Selfless Service
Sacrifice
Commitment
Loyalty
Duty

Interaction:
Respect
Empathy
Compassion
Humor

Knowledge:
Job Tasks/Skills
Education
Trainability
Learning

Judgment:
Common Sense
Logical Decisions
Understanding
Anticipation
Insight/Filtering
Adaptive/Flexible

Motivation:
Will to Win
Endurance
Resilience
Stick-to-it-iveness
Heart / Drive
Determination
Work Ethic

Application:
Planning
Communicating
Executing

Moral Domain

Cognitive Domain

Physical Domain

Medical Health:
Illness Resistance
Nutrition
Body Composition

Character:
Honor
Integrity
Justice
Candor
Personal Courage

Athletic Skills:
Coordination
Agility
Balance
Power
Speed
Accuracy
Flexibility
Reaction Time

Conduct:
Maturity
Discipline
Bearing
Coolness

Self-Esteem:
Confidence
Self-Worth
Self-Efficacy

General Fitness:
Cardio Endurance
Cardio Strength
Muscular Endurance
Muscular Strength

TEACHING FUTURE ARMY LEADERS TO SOLVE COMPLEX PROBLEMS

WholeSoldier Model in Action

Draft Developmental Counseling Form

PRINCIPAL PURPOSE: To assist leaders in conducting and recording counseling data pertaining to subordinates.
ROUTINE USES: For subordinate leader development IAW FM22-100. Leaders should use this form as necessary.
DISCLOSURE: Disclosure is voluntary.

PART I- ADMINISTRATIVE DATA

Name (Last, First, MI) | Rank/Grade | Soldier AKO Username | Date of Counseling

Organization | Name and Title of Counselor

Part II - Evaluation of Performance

KEY	1	2	3	4	5	6	7
	"Always" "Unacceptable" "Separate from Army"	"Most of the Time" "Very Bad" "Problem Soldier"	"Sometimes" "Bad" "Needs some work"	"Neutral" "Just Enough" "Only what is required"	"Sometimes" "Good" "Bit more than standard"	"Most of the time" "Very Good" "Solid Performer"	"Always" "One of the best" "Example for Others"

Moral Domain

PURPOSE: Selfless Service, Sacrifice, Commitment, Loyalty, Duty
Not a team player and displays an individualistic attitude. Soldier tends to put personal desires before others and unit mission. / Soldier neutral towards the team. / Committed to performing duties even when sacrifice required. Selfless member of the team with loyalty to mission and unit.

MOTIVATION: Will to Win, Endurance, Resilience, Heart, Drive, Determination, Work Ethic
Lacks determination and drive to get the job done. Doesn't respond well to tough conditions or bounce back from setbacks. / Minimum effort required. / Possesses the will to win and puts forth best effort. Won't quit and positively responds to setbacks. Inspires motivation in others.

INTERACTION: Respect, Empathy, Compassion, Humor
Cynical, negative, or inconsiderate towards others. Doesn't exert effort to interact with others and/or is awkward in interaction. / Soldier is just there. / Positive, respectful, outgoing, and humorous. Makes others comfortable to share ideas/issues and adds to team atmosphere.

CONDUCT: Maturity, Discipline, Bearing, Reliability, Coolness
Needs constant supervision and has problems leading a balanced life. Disrespectful to chain of command. Loses bearing/coolness. / Acceptable conduct. / Performs well without supervision and within intent. Mature lifestyle and coolness/bearing under stress is example for others.

CHARACTER: Honor, Integrity, Justice, Candor, Personal Courage
Looks for loopholes and lacks integrity to be trusted. Won't take a stand for right or take ownership of mistakes. / Marginal character. / Can be trusted to do and stick up for what is right. Accepts and strives to correct mistakes. Tells whole truth even when painful.

SELF-ESTEEM: Self-Efficacy, Self Worth, Confidence
Lacks confidence and is unsure of ability to accomplish mission/goals. Won't try new things and thinks of excuses when failure may happen. / Marginal confidence level. / Displays confidence in interactions and execution of tasks. Understands value to team, isn't afraid to fail, and believes he/she is up to the task.

KEY	1	2	3	4	5	6	7
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Cognitive Domain

KNOWLEDGE: Education, Trainability, Capacity, Technical MOS Skills
Untrainable and has shown an unwillingness to learn. Lacks the technical competence to complete tasks. / Basic grasp of MOS tasks. / Knows his/her task two levels up. Seeks higher learning. Soldier is an intelligent, life-long learner.

JUDGEMENT: Visualization, Analysis/Insight, Conceptualization, Filtering
Soldier displays a lack of good judgment. Soldier does not apply "common sense." Soldier makes choices that hurt the team. / Marginal Judgment. / Soldier makes good decisions. Soldier sees the big picture and knows what is important. Soldier has insight.

APPLICATION: Ability to Translate Knowledge and Judgement into Action, Multi-Tasking
Soldier is continually reliant on others. Soldier can't handle more than one task at a time. Cannot get the job done. / Ability to complete required tasks. / Able to apply knowledge/ judgment to complete complex tasks. Able to perform more than one task at a time to standard.

Physical Domain

PHYSICAL FITNESS: Endurance, Stamina, Strength, Flexibility,
Soldier does not meet established Army standards. Soldier cannot carry his/her share of the load. Soldier fails APFT. / Meets minimal physical standard. / Soldier carries more than his/her share of the load. Soldier meets and exceeds established Army PT standards.

ATHLETICISM: Power, Speed, Coordination, Agility, Balance, Accuracy
Soldier is awkward/unathletic on tasks requiring coordination. Soldier cannot fight. Soldier is unable to perform under load. / Soldier has average athletic ability. / Soldier is an athlete and can apply power, agility, speed, coordination, and accuracy simultaneously in mission situations

MEDICAL FITNESS: Illness Frequency, Physical Wellness, Body Composition
Soldier is regularly on profile or at sick call. Fails to meet body % standard. Unhealthy habits contribute to poor performance. / Maintains average medical health. / Soldier is not hindered by sickness/injury. Takes care of his/her body to prevent illness. Thrives under hard training.

Part III: Plan of Action

Soldier Signature | Date

Counselor Signature | Date
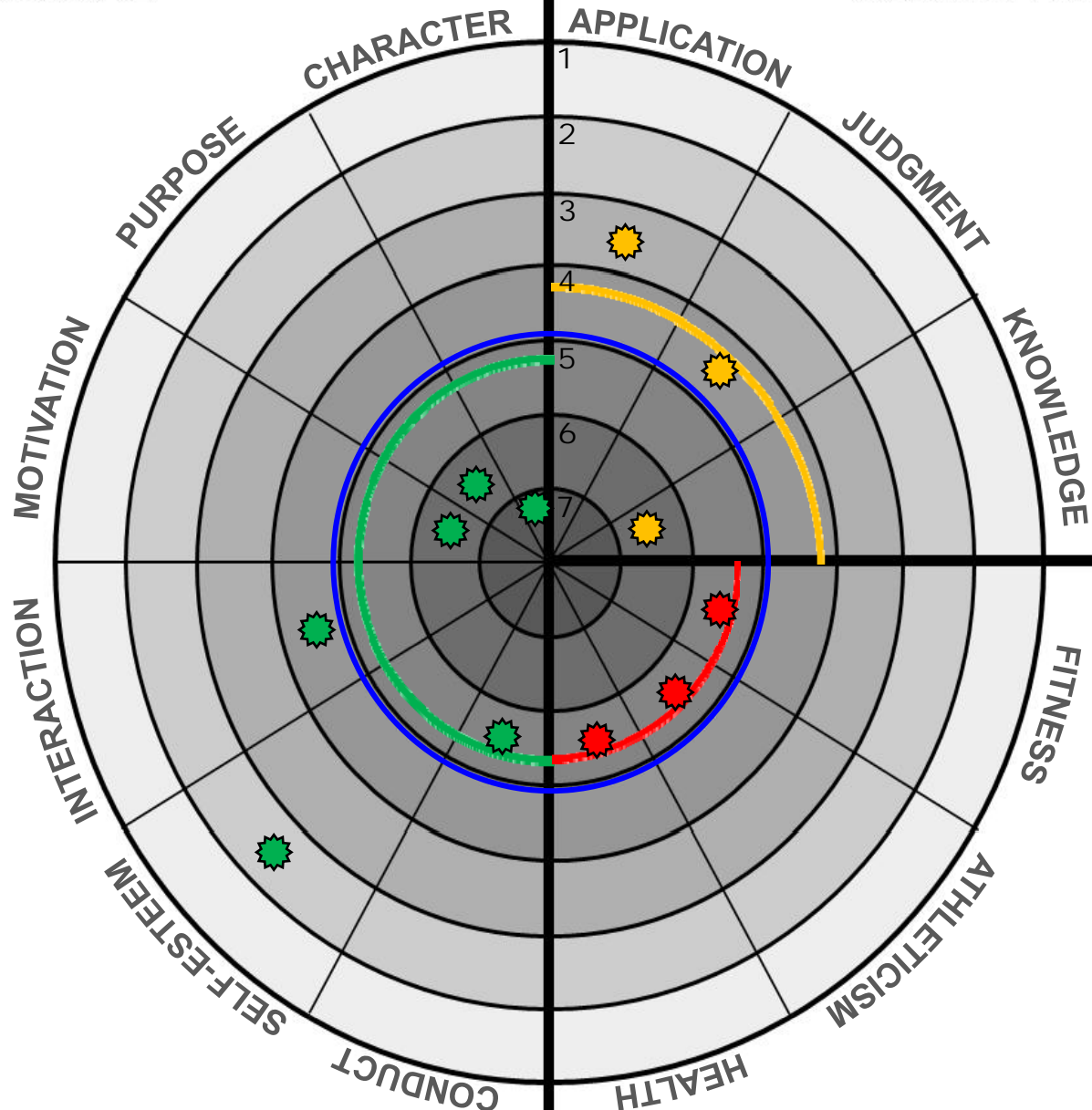
"*WholeSoldier*" Sample Performance Report
Infantryman #24

Moral Performance = 44/59 = 5.22/7
- **Character-** Totally trustworthy, and always sticks up for what is right.
- **Purpose-** Displays commitment and self-sacrifice to the team 95% of the time.
- **Motivation-** Soldier puts forth max effort and only rarely gives less than his all.
- **Interaction –** Shows respect and is compassionate, but sometimes is awkward in interpersonal interactions.
- **Self-Esteem-** Doesn't display confidence or view himself as a valuable member of the team.
- **Conduct –** Soldier displays maturity and discipline by completing tasks without supervision, but sometimes loses his cool when under stress.

Cognitive Performance = 15/25= 4.20/7
- **Knowledge-** Soldier demonstrates total knowledge of MOS tasks and studies to learn next level up.
- **Judgment-** Makes logical decisions, but has problems filtering irrelevant information.
- **Application-** Sometimes unable to plan effectively to implement decisions.

Physical Performance = 12/16 = 5.25/7
- **Fitness-** Scored 263 last APFT.
- **Athleticism-** Displays better than average coordination, agility in combat-focused tasks.
- **Health-** Maintains body better than average.

"WholeSoldier" **Performance = 71/100 = 4.97/7**

We can better mentor…

"WholeSoldier"
Sample Population Data
4 Infantry Platoons

NAME	Purpose	Motivation	Social	Conduct	Character	Self-Esteem	Thought	Capability	Knowledge	Physical	Medical	Elicited Total	Moral	Cognitive	Physical	Total	Rank
	7	7	7	7	7	7	7	7	7	6	7	100	59	25	15	98.6926	1
	5	6	7	6	7	7	7	7	7	7	7	95	53	25	16	93.8472	2
	6	6	5	6	7	6	6	6	6	7	6	95	51	21	15	87.5789	3
	6	6	5	6	7	5	6	6	7	7	5	95	50	22	14	86.6244	4
	6	6	6	6	7	5	6	5	5	7	6	100	51	19	15	85.2336	5
	7	6	5	7	7	5	6	5	5	5	6	100	53	19	13	84.6554	6
	7	6	6	3	6	7	6	6	6	7	5	95	49	21	14	84.0396	7
	5	4	6	6	7	6	7	6	6	4	4	90	48	22	9	79.4016	8
	5	6	5	5	6	6	6	5	6	6	6	85	45	20	14	79.2734	9
	6	6	4	6	6	6	5	4	4	6	6	95	48	15	14	77.7282	10
	6	6	5	5	6	6	4	5	5	6	5	80	46	16	13	75.7640	11
	5	6	5	5	6	4	5	5	5	6	6	75	44	18	14	75.7378	12
	5	6	5	5	5	4	5	4	6	6	6	70	45	15	14	74.4603	13
	6	6	3	7	7	3	3	5	4	5	6	80	47	14	13	73.8387	14
	5	6	6	6	4	4	4	5	5	5	6	85	46	15	13	73.7372	15
	6	5	6	6	7	5	4	4	6	3	3	75	50	16	7	73.1613	16
	3	3	6	6	6	6	7	7	7	2	4	45	42	25	7	72.8442	17
	6	6	4	5	6	3	4	5	5	5	6	70	44	16	13	72.5855	18
	5	5	5	5	5	5	5	5	5	5	6	70	42	18	13	72.4594	19
	5	5	5	3	6	7	4	5	5	5	5	75	43	18	12	72.2340	20
	6	5	6	4	6	4	5	5	5	5	5	70	45	15	12	71.8844	21
	5	5	3	5	6	5	5	5	5	5	7	60	42	16	14	71.7583	22
	5	6	4	4	5	5	6	5	4	6	5	70	41	18	13	71.5468	23
	6	6	4	5	7	2	3	4	6	5	5	75	44	15	12	70.9765	24
	5	6	4	5	5	5	4	5	4	5	6	65	43	15	13	70.4193	25
	5	5	4	5	6	4	5	6	4	5	4	60	42	17	11	69.7193	26
	5	5	5	4	5	2	4	5	3	7	7	60	37	14	16	67.5545	27
	5	6	4	4	3	4	4	5	6	6	6	55	37	15	14	66.3784	28
	5	3	7	2	6	6	6	4	5	4	5	50	40	16	10	66.2992	29
	4	5	4	5	5	5	4	6	4	4	4	65	39	18	9	66.0722	30
	5	6	5	4	4	3	3	6	5	5	4	60	39	12	13	63.5387	31
	4	4	4	4	4	4	5	5	5	6	6	60	34	16	13	62.8163	32
	5	4	4	4	5	4	4	4	5	5	4	65	37	15	11	62.7680	33
	5	4	2	2	3	6	5	4	7	7	7	40	31	15	16	62.2660	34
	3	3	5	4	4	7	5	5	6	5	1	60	35	19	8	61.5160	35
	4	5	5	4	5	4	3	4	4	3	5	50	38	13	9	59.8534	36
	4	4	3	4	5	3	3	2	3	7	7	70	33	9	16	58.9814	37
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	3	3	5	4	5	5	4	4	2	4	4	45	35	15	7	56.5637	40
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	4	5	3	4	4	4	4	4	3	4	5	40	33	12	10	55.0045	42
	4	5	3	2	3	4	5	5	2	5	5	30	29	14	12	54.9887	43
	4	4	3	4	4	4	4	4	5	2	4	25	33	15	7	54.6454	44
	1	2	5	3	4	4	5	7	7	2	3	25	26	22	6	53.5186	45
	4	5	5	3	3	4	2	2	4	4	5	30	33	9	10	52.9199	46
	4	3	3	4	4	3	5	5	5	2	2	50	30	18	5	52.2999	47
	4	4	3	2	4	2	3	4	4	6	6	25	26	12	14	51.5093	48
	3	4	5	3	3	4	4	4	3	4	4	40	30	13	8	50.9524	49
	4	4	4	2	2	4	4	4	4	4	4	35	27	14	9	50.7495	50
	5	4	2	2	2	2	3	4	4	5	7	20	25	12	14	49.8818	51
	3	5	4	2	2	4	4	3	4	1	4	30	30	12	6	47.8652	52
	3	5	4	2	2	5	2	1	3	4	6	10	28	7	11	46.9172	53
	2	2	2	1	2	4	5	5	5	4	4	2	18	18	9	44.4711	54
	2	3	3	3	2	2	2	3	5	3	6	50	21	12	10	42.8115	55
	3	4	3	4	4	4	4	4	4	2	2	20	29	7	4	39.5092	56
	1	1	5	1	1	4	4	4	4	2	2	10	16	14	5	34.8802	57
	2	3	3	2	1	3	2	3	3	1	1	5	19	8	5	31.9733	58
	1	1	1	1	1	2	2	2	2	2	2	5	8	7	5	20.1294	59
	1	1	5	1	1	1	1	1	1	1	1	1	14	4	2	19.7675	60
	1	1	1	1	1	1	2	1	1	1	1	1	8	5	2	15.3846	61

Method:
1. Assess sub-domain performance (1-7).
2. Evaluate performance holistically (1-100).
3. Use correlation analysis to infer weights.
4. Calculate Moral, Cognitive, Physical, and *WholeSoldier* total.

Finding / Insight:
a. *WholeSoldier* "tells the story" of individual areas of relative strength and weakness and allows us to "see" the entire population.
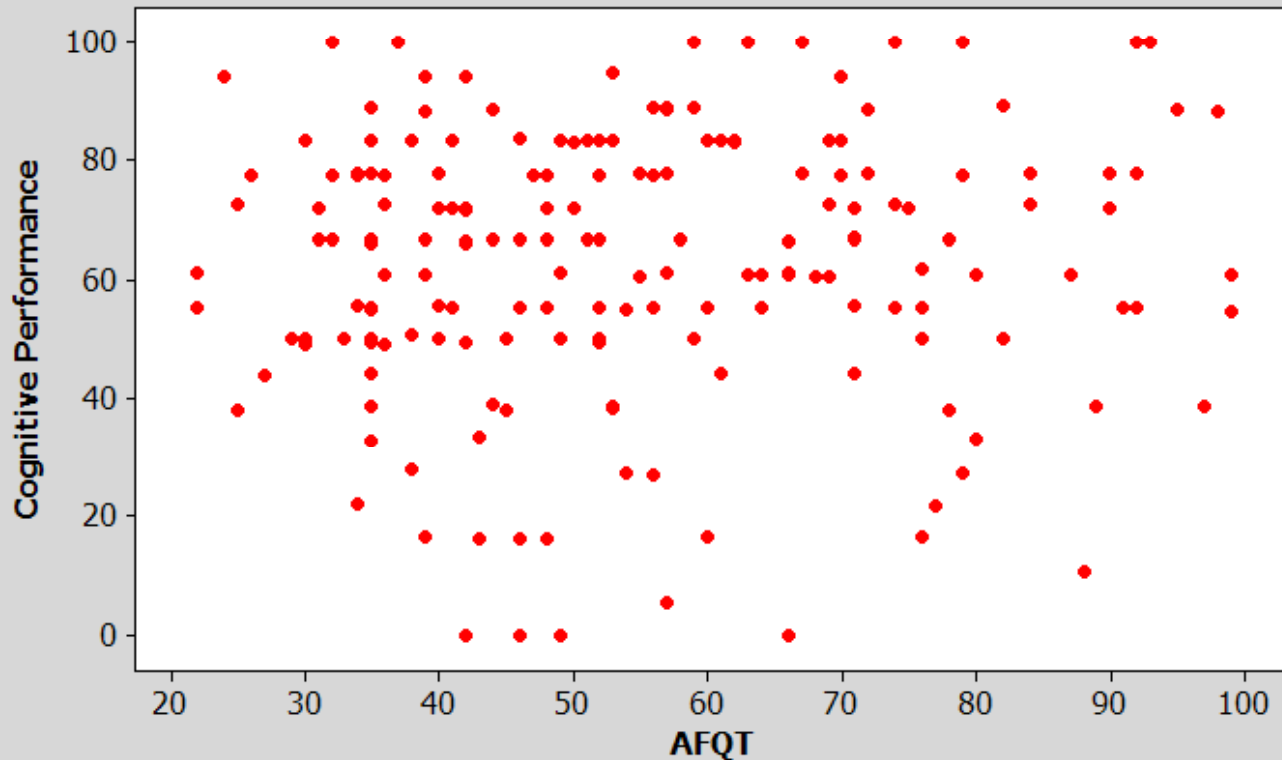
Conclusion:
a. We can provide many levels of distinction on *WholeSoldier* Performance.
b. *WholeSoldier* Performance assessment is useful feedback to subordinates for use as a developmental counseling tool.
c. *WholeSoldier* Performance is a good "endstate metric" and will provide information for sound decision-making in many areas.

THE FOLLOWING INSIGHTS ARE ONLY POSSIBLE BECAUSE WE HAVE CLEARLY DEFINED OUR DESIRED ENDSTATE!

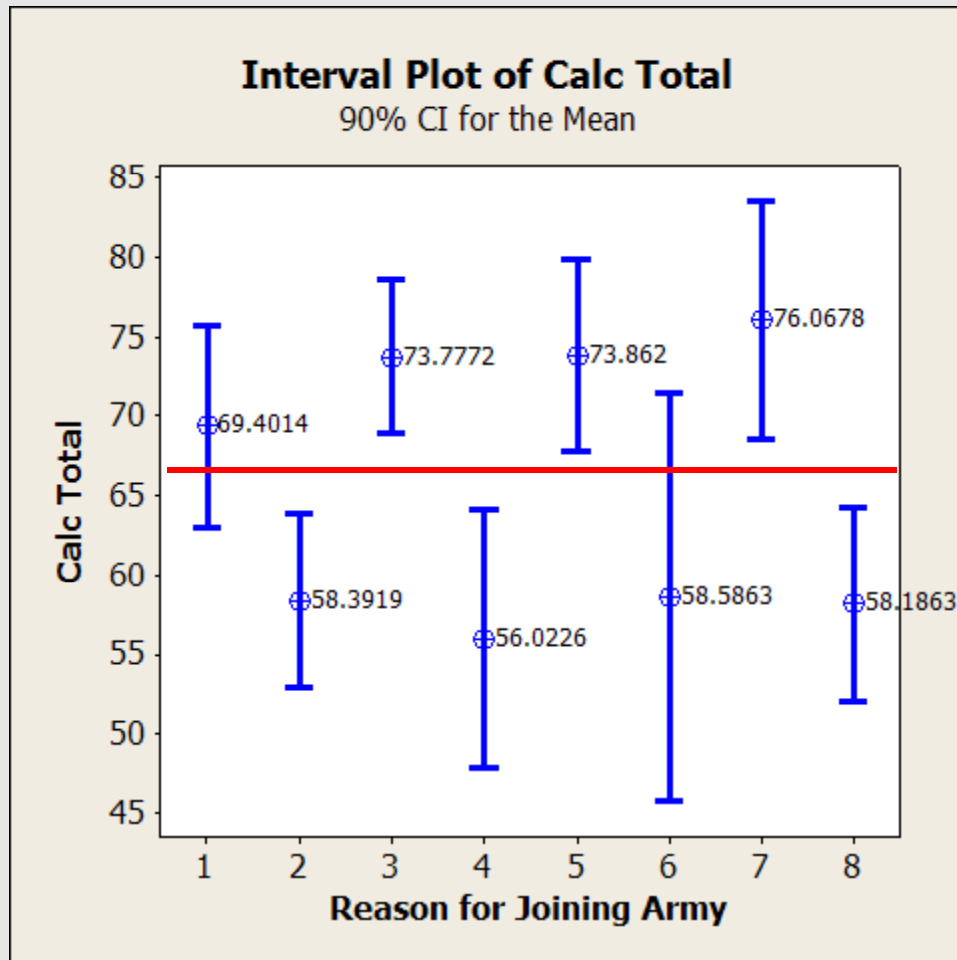# Insight

Scatterplot of Cognitive Performance vs AFQT

Finding: There is no apparent relationship between "Cognitive Performance" as evaluated in units (different from academic definition) with AFQT score.

Insight: "Sir, I care a lot more about common sense than I do about book smarts."

Conclusion: AFQT may not be a good predictor of what we want (quality) in terms of performance, but has been shown to be related to retention (quantity).
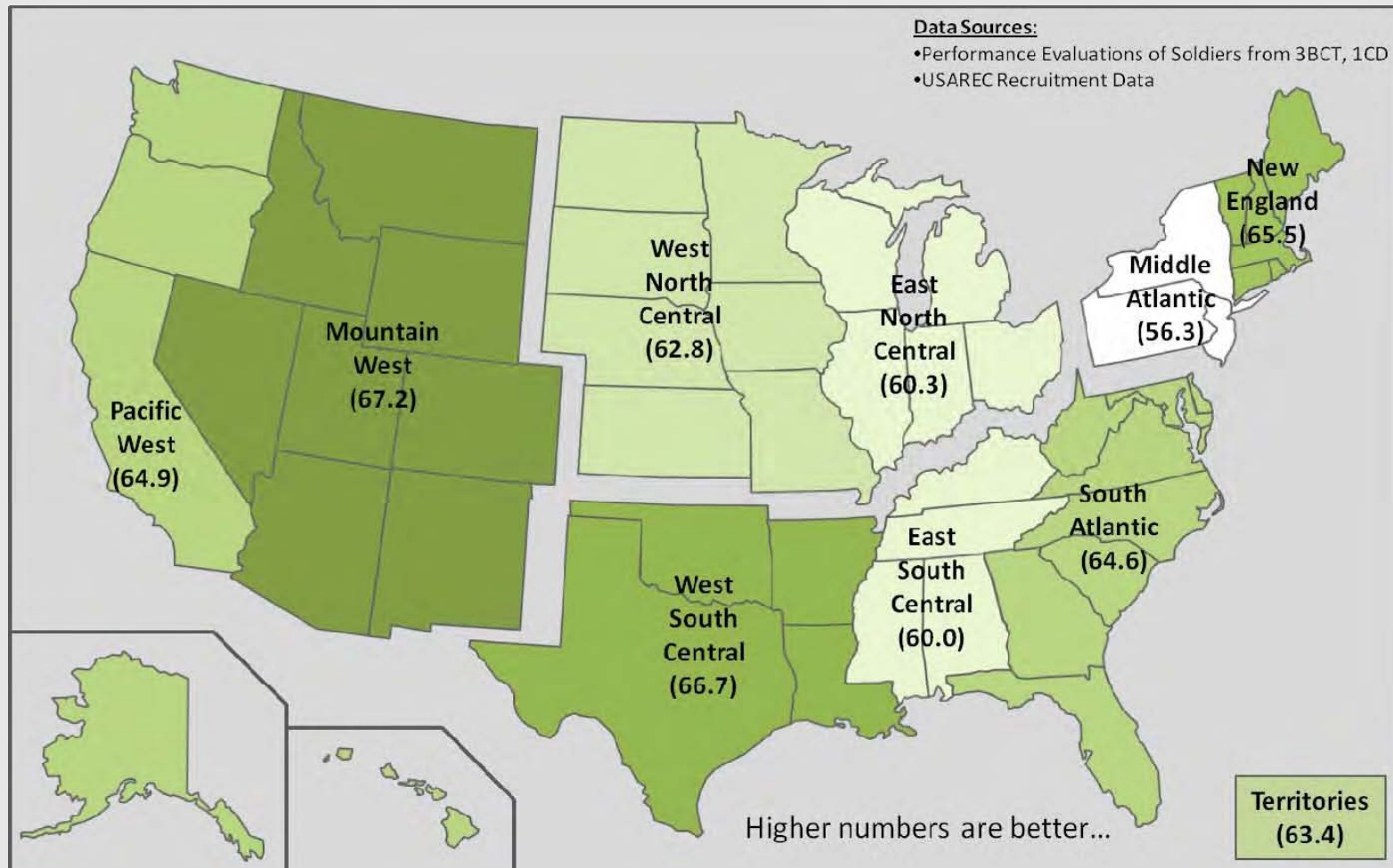
Data Source: Performance Data, USAREC Data, & Questionnaire Results as analyzed by ORCEN & CDAS

Insight

Interval Plot of Calc Total
90% CI for the Mean

2) **Which of the following is <u>second most important</u> to you about joining the Army?**

1) action & adventure
2) steady paycheck
3) service to Nation
4) college benefits
5) tough challenges
6) health benefits
7) good people/friends
8) a fresh start in life

Finding: Reasons for joining the service are statistically significant .

Insight: "Marines 'issue a challenge' / 'sell it on service.'" *–Dozens of interviewees*

Conclusion: Pay and benefits may do a good job of impacting <u>quantity</u> as recruiting and marketing tools, but we would desire to inspire people to join for service, challenges, and the camaraderie of other good people when considering <u>quality</u>…

Data Source: Performance Data, USAREC Data, & Questionnaire Results as analyzed by ORCEN & CDAS

Geographic

Data Sources:
- Performance Evaluations of Soldiers from 3BCT, 1CD
- USAREC Recruitment Data

New England (65.5)

Middle Atlantic (56.3)

West North Central (62.8)

East North Central (60.3)

Mountain West (67.2)

Pacific West (64.9)

South Atlantic (64.6)

East South Central (60.0)

West South Central (66.7)

Territories (63.4)

Higher numbers are better...

Finding: 80% confidence that average Soldier Performance is higher for West South Central than for Middle Atlantic...Moral Performance drives this finding.

Insight: More data will allow us to see differences at state, county, and smaller levels...

Conclusion: With more performance data, we can better focus our recruiting efforts!!!

Data Source: Performance Data, USAREC Data, & Questionnaire Results as analyzed by ORCEN & CDAS

Insights

Summary

These insights are now quantifiable beyond anecdote because we have defined our endstate with WholeSoldier Performance.

AFQT: AFQT does not predict cognitive performance as defined in this study; it has been shown to predict retention.

HS Graduation: HS Graduation appears to somewhat indicate a level of "stick-to-it-iveness," but not statistically significant in our data.

Reason for Joining: Soldiers that joined for service to the Nation, tough challenges, and the camaraderie of good people perform better than those that joined for a steady paycheck, college benefits, or a fresh start.

Athletic Participation: Soldiers that participated in more than 9 seasons of Varsity or Junior Varsity team sports perform better than others.

Seeking/Sought for Help: Soldiers reporting that they seek help during difficulty or are frequently sought out for help to discuss personal problems perform better than those that don't/aren't.

Thankfulness: Soldiers that report feeling pretty thankful for the people and things in their lives with high frequency perform better than those that don't.

Attitude Towards Authority: Soldiers reporting that their teachers/bosses frequently told them to do stupid things performed worse than those who didn't.

Similar System…Marine FITREP

- ✓ *Provides 7 levels of distinction on desired attributes.*
- ✓ *Only lowest "block" is adverse; majority of levels focus on success.*
- ✓ *Provides clear verbal definitions of levels.*

E. INDIVIDUAL CHARACTER

1. COURAGE. Moral or physical strength to overcome danger, fear, difficulty or anxiety. Personal acceptance of responsibility and accountability, placing conscience over competing interests regardless of consequences. Conscious, overriding decision to risk bodily harm or death to accomplish the mission or save others. The will to persevere despite uncertainty.

ADV	Demonstrates inner strength and acceptance of responsibility commensurate with scope of duties and experience. Willing to face moral or physical challenges in pursuit of mission accomplishment.		Guided by conscience in all actions. Proven ability to overcome danger, fear, difficulty or anxiety. Exhibits bravery in the face of adversity and uncertainty. Not deterred by morally difficult situations or hazardous responsibilities.		Uncommon bravery and capacity to overcome obstacles and inspire others in the face of moral dilemma or life-threatening danger. Demonstrated under the most adverse conditions. Selfless. Always places conscience over competing interests regardless of physical or personal consequences.		N/O
A ☐	B ☐	C ☐	D ☐	E ☐	F ☐	G ☐	H ☐

2. EFFECTIVENESS UNDER STRESS. Thinking, functioning and leading effectively under conditions of physical and/or mental pressure. Maintaining composure appropriate for the situation, while displaying steady purpose of action, enabling one to inspire others while continuing to lead under adverse conditions. Physical and emotional strength, resilience and endurance are elements.

ADV	Exhibits discipline and stability under pressure. Judgment and effective problem-solving skills are evident.		Consistently demonstrates maturity, mental agility, and willpower during periods of adversity. Provides order to chaos through the application of intuition, problem-solving skills, and leadership. Composure reassures others.		Demonstrates seldom-matched presence of mind under the most demanding circumstances. Stabilizes any situation through the resolute and timely application of direction, focus and personal presence.		N/O
A ☐	B ☐	C ☐	D ☐	E ☐	F ☐	G ☐	H ☐

3. INITIATIVE. Action in the absence of specific direction. Seeing what needs to be done and acting without prompting. The instinct to begin a task and follow through energetically on one's own accord. Being creative, proactive and decisive. Transforming opportunity into action.

ADV	Demonstrates willingness to take action in the absence of specific direction. Acts commensurate with grade, training and experience.		Self-motivated and action-oriented. Foresight and energy consistently transform opportunity into action. Develops and pursues creative, innovative solutions. Acts without prompting. Self-starter.		Highly motivated and proactive. Displays exceptional awareness of surroundings and environment. Uncanny ability to anticipate mission requirements and quickly formulate original, far-reaching solutions. Always takes decisive, effective action.		N/O
A ☐	B ☐	C ☐	D ☐	E ☐	F ☐	G ☐	H ☐

JUSTIFICATION:

Similar System…Marine FITREP

✓ *Formally provides guidance on inflated reports.*

USMC FITNESS REPORT (1610)
NAVMC 10835A (Rev. 10-99) (EF VER 1.0)
PREVIOUS EDITIONS WILL NOT BE USED
SN: 0109-LF-069-0600

DO NOT STAPLE THIS FORM

COMMANDANT'S GUIDANCE

The completed fitness report is the most important information component in manpower management. It is the primary means of evaluating a Marine's performance and is the Commandant's primary tool for the selection of personnel for promotion, augmentation, resident schooling, command, and duty assignments. Therefore, the completion of this report is one of an officer's most critical responsibilities. Inherent in this duty is the commitment of each Reporting Senior and Reviewing Officer to ensure the integrity of the system by giving close attention to accurate marking and timely reporting. Every officer serves a role in the scrupulous maintenance of this evaluation system, ultimately important to both the individual and the Marine Corps. Inflationary markings only serve to dilute the actual value of each report. Reviewing Officers will not concur with inflated reports.

✓ *Evaluates "Rater Courage."*

H. FULFILLMENT OF EVALUATION RESPONSIBILITIES

1. EVALUATIONS. The extent to which this officer serving as a reporting official conducted, or required others to conduct, accurate, uninflated, and timely evaluations.

ADV					N/O
	Occasionally submitted untimely or administratively incorrect evaluations. As RS, submitted one or more reports that contained inflated markings. As RO, concurred with one or more reports from subordinates that were returned by HQMC for inflated marking.	Prepared uninflated evaluations which were consistently submitted on time. Evaluations accurately described performance and character. Evaluations contained no inflated markings. No reports returned by RO or HQMC for inflated marking. No subordinates' reports returned by HQMC for inflated marking. Few, if any, reports were returned by RO or HQMC for administrative errors. Section Cs were void of superlatives. Justifications were specific, verifiable, substantive, and where possible, quantifiable and supported the markings given.		No reports submitted late. No reports returned by either RO or HQMC for administrative correction or inflated markings. No subordinates' reports returned by HQMC for administrative correction or inflated markings. Returned procedurally or administratively incorrect reports to subordinates for correction. As RO nonconcurred with all inflated reports.	

A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H ☐

JUSTIFICATION:

Similar System…Marine FITREP

- ✓ *Provides senior raters with 8 block levels in profile.*
- ✓ *Profile weighted such that only bottom level is "adverse."*
- ✓ *Top 5 blocks equivalent to our single top block.*

K. REVIEWING OFFICER COMMENTS

1. OBSERVATION: ☐ Sufficient ☐ Insufficient   **2. EVALUATION:** ☐ Concur ☐ Do Not Concur

3. COMPARATIVE ASSESSMENT:	DESCRIPTION		COMPARATIVE ASSESSMENT
Provide a comparative assessment of potential by placing an "X" in the appropriate box. In marking the comparison, consider all Marines of this grade whose professional abilities are known to you personally.	THE EMINENTLY QUALIFIED MARINE	☐ 1	
	ONE OF THE FEW EXCEPTIONALLY QUALIFIED MARINES	☐ 3 ☐ 5	**44 total**
	ONE OF THE MANY HIGHLY QUALIFIED PROFESSIONALS WHO FORM THE MAJORITY OF THIS GRADE	☐ 7 ☐ 8 ☐ 9	
	A QUALIFIED MARINE	☐ 10	
	UNSATISFACTORY	☐ 1	

4. REVIEWING OFFICER COMMENTS: Amplify your comparative assessment mark; evaluate potential for continued professional development to include: promotion, command, assignment, resident PME, and retention; and put Reporting Senior marks and comments in perspective.

Key Attributes

- ♦ More distinction on levels of performance (A Distribution)
- ♦ Quantifiable evaluation facilitates analysis to support decisions
- ♦ Enforcement of profile and culture of "truth telling"

End-State Metrics
How Do You Reflect Performance?

The Army OER

b. POTENTIAL C
SENIOR RATED
BY DA)

☒ ABO
(Less t
Mas

☐ CEN

☐ BELO

☐ BELO

DO NOT RETAIN

+

DA FORM 67-9, MAR 2006

A Utility Approach

Pairwise comparison for order[1]

	Compared to				
	Asset A	Asset B	Asset C	Asset D	Total
Asset A		3	2	3	8
Asset B	1		3	2	6
Asset C	2	1		1	4
Asset D	1	2	3		6

(leftmost label: Asset)

Bonus assignment for value

The Marine FITREP

COMPAR
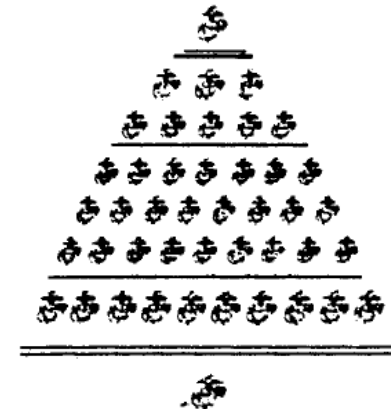
FAIL!

HARD!

SUCCESS!

The Components of Our Approach

- A Qualitative Value Model: Identifying the *Performance Attributes* That Our Leaders Value

- An End-State Metric of Performance: Measuring the *Demonstrated Performance* of Those We Have

- **Strategic Applications**

  "What I want is to improve the quality of the Soldiers we have while reducing the dollars we spend to get that quality"

  LTG Freakley, Accessions Command

- Statistical Learning: Linking *Demonstrated Performance* to *Performance Attributes* and *Profiles of Potential*

Given "WholeSoldier" Performance implementation, we can better:

Recruit: *Develop holistic model of "WholeRecruit" Potential <u>longitudinally</u> and:*

» **Quantify risks/opportunities** involved in adjusting enlistment policies/standards.

» "**Screen in**" during times of recruiting difficulty and "**screen out**" in times of recruiting richness.

» **Offer individual incentives** for various MOS based on *WholeRecruit* Potential, desires of the candidate, and needs of the Army.

» Continually **consider various "entry metrics"** for updates to the *WholeRecruit* model.

» **Adjust target market** and allocate assets based on both quantity and quality.

» **Adjust marketing message** to target "who we want."

» **Issue recruiting missions** to reflect a distinct quantity vs. quality balance.

Expected Soldier Performance Given Varying Recruit Potential

(x-axis: Recruit Potential, 0–100; y-axis: Expected Soldier Performance, 0–100)
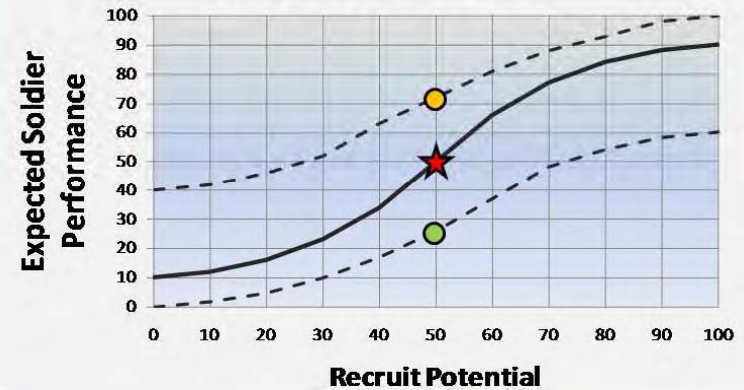
○ = High Performance based on Potential
★ = Expected Performance
○ = Low Performance based on Potential

Data Sources:
• Performance Evaluations of Soldiers from 3BCT, 1CD
• USAREC Recruitment Data

New England (65.5)
West North Central (62.8)
East North Central (60.3)
Middle Atlantic (56.3)
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Territories (63.4)

Higher numbers are better...
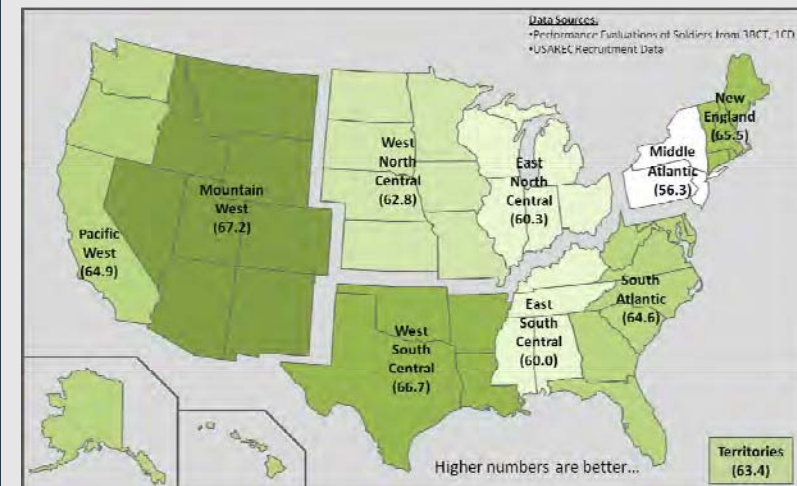
NOTE: Only for discussion of possibilities; not intended as a conclusive result for use in current decisions.

Given "WholeSoldier" Performance implementation, we can better:

Train:

» **Offer individual training/education** to those that are "best qualified" or "most needy."

» **Measure performance ROI** of training/ education programs.

» **Design unit training/education** to address performance trends.

Retain:

» **Offer individual targeted incentives** to retain "who we want."

Promote/Assign:

» **Understand attributes desired in next grade** and promote "best qualified."

» **Assign** the right individual to the right job or officer career field.
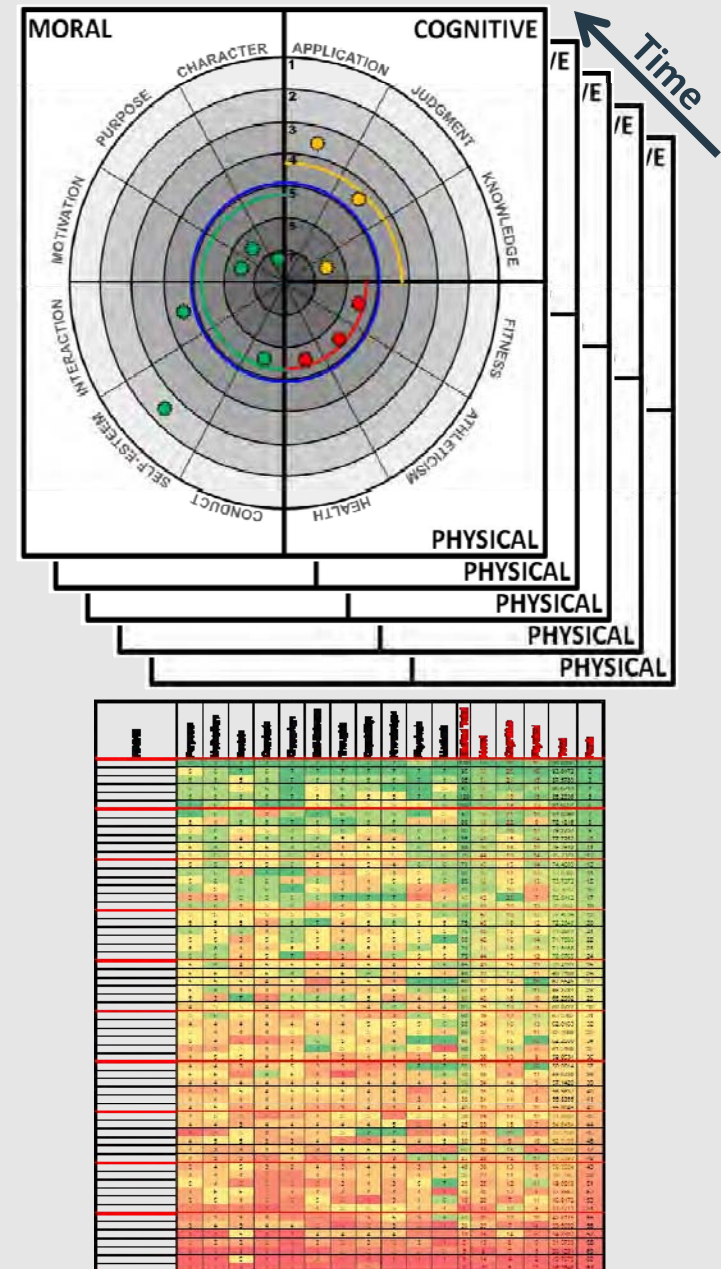
Given "WholeSoldier" Performance implementation, we can better:

Accomplish the Mission:

» **Relate *WholeSoldier* to *WholeUnit* performance** by determining effects of differing portfolios of individual performance attributes combined to maximize unit performance through Systems Dynamics.
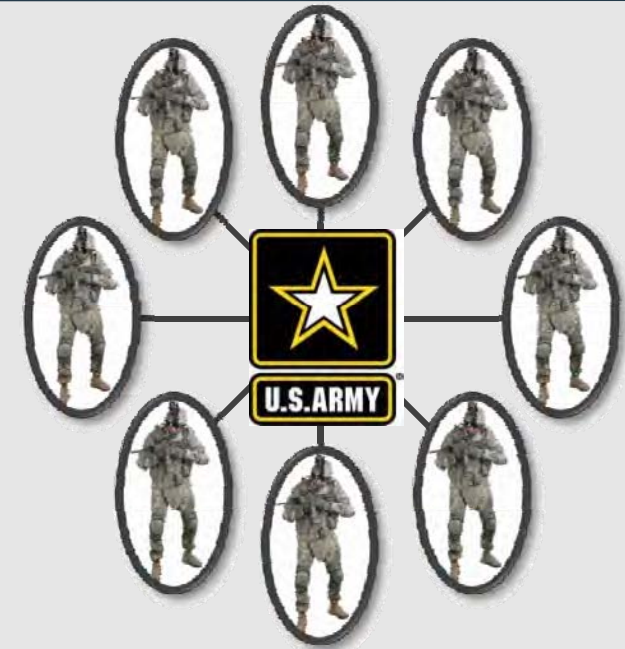
Allocate Resources:

» **Investigate best allocation of budgetary resources** across the DOTMLPF(EE) spectrum.

Warfighting Power:

$$W = (D+O+M+F) * (LP)^{TEE}$$

W = Warfighting Power

D = Doctrine	L = Leadership
O = Organization	P = Personnel
M = Materiel	T = Training
F = Facilities	E = Experience
	E = Education

- Modified from GEN Schoomaker/GEN Boykin discussion

Given "WholeSoldier" Performance implementation, we can better:

Develop and Counsel Soldiers:

 +

Provide Strategic Situational Awareness:

Policy Decision **+** **+** **Business Model** Google amazon.com **=** **Measured Effect** **Situational Awareness**

The Components of Our Approach

- A Qualitative Value Model: Identifying the *Performance Attributes* That Our Leaders Value

- An End-State Metric of Performance: Measuring the *Demonstrated Performance* of Those We Have

- Strategic Applications

    "What I want is to improve the quality of the Soldiers we have while reducing the dollars we spend to get that quality"

    LTG Freakley, Accessions Command

- **Statistical Learning: Linking *Demonstrated Performance* to *Performance Attributes* and *Profiles of Potential***

Soldier Potential to Performance Model
Client: Accessions Command

Reverse Engineering Soldier Performance

P2P Model
Y = MX + B

Admissions Survey Model

Mental Health Screening

TAPAS Research FY 08

WholeSoldier Research (FY 08)

AFQT/ MEPS
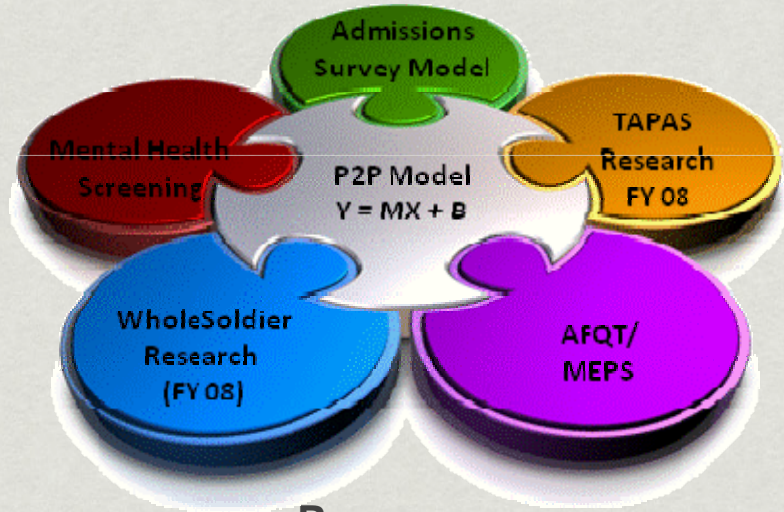
Purpose

Develop an application to predict the future performance of a recruit based upon attributes we can observe about that recruit upon their indication of interest in service.

Objectives

- Identify pre-existing attributes that indicate the potential for a high performing Soldier
- Develop predictive models that leverage the known attributes of a recruit to predict performance in an operational unit
- Improved ability to screen soldiers who are unlikely to perform well in units

Technical Approach

- Identify Data Shortfalls: Officer Candidate vs. Enlisted Soldier
- Surveys for Additional Data Collection
- WholeSoldier Performance Assessment
- Data Mining (Regression, Neural Networks, LDA, SVM etc.) to link Performance to Potential

Deliverables

- QRR Presentation on Methodology (JAN 09)
- OSUT Success Prediction Model (MAR '10)
- In-Unit Success P2P Model (JUL '10)
- Final Briefing (JUL'10)
- Technical report (AUG 1'0)

WholeSoldier Performance Assessment

Classification Model Performance
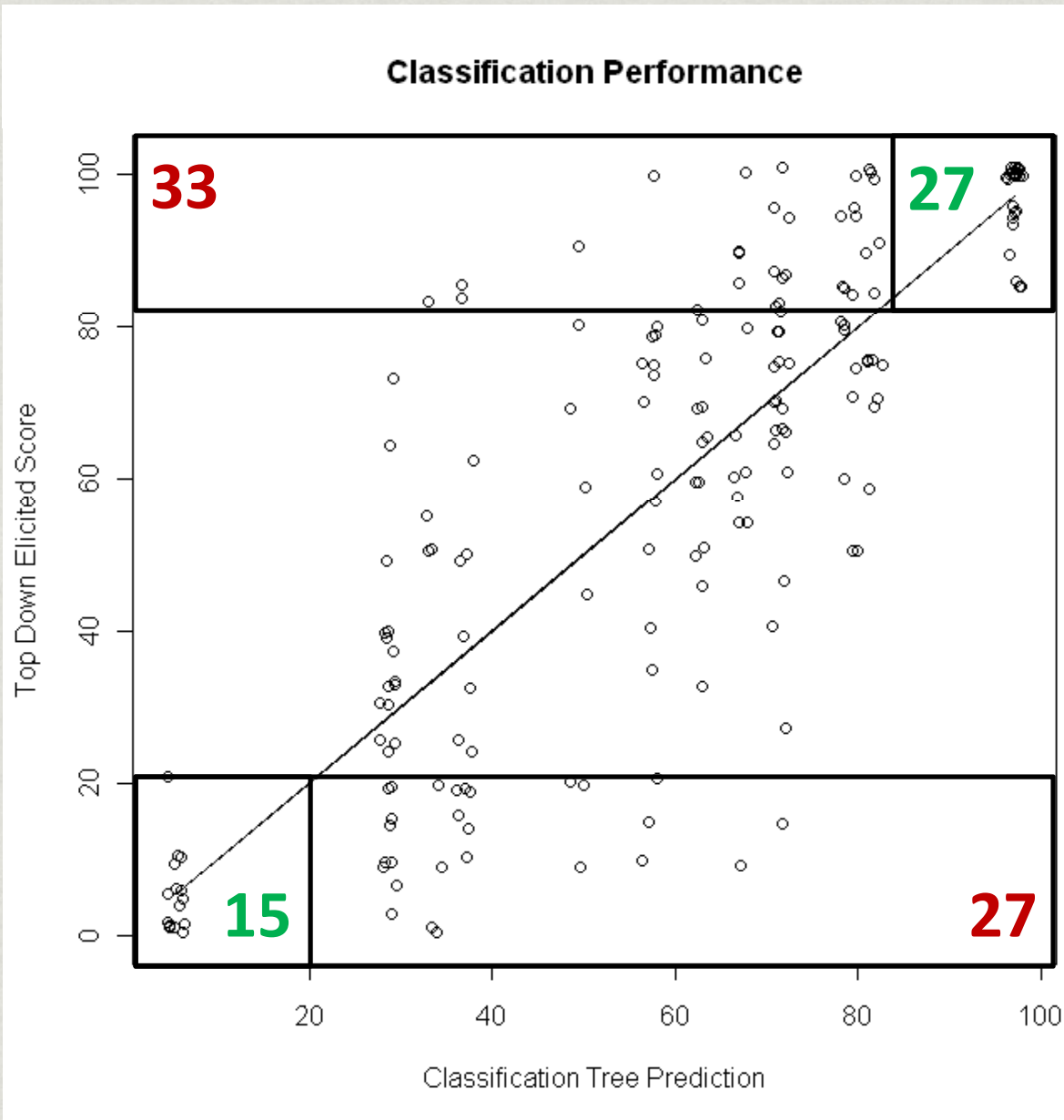
Excellence

Accuracy = 45%

Precision = 100%

Poor Performance

Accuracy = 36%

Precision = 100%

Soldier Record Development

Predictors

Accessions Database

- ASVAB/AFQT
- HS Diploma
- Medical Waiver
- Moral Waiver
- Age
- Demographics
- Family

TAPAS Score

- "Can Do"
- "Will Do"

Soldier Survey

- Athletics
- Leadership
- Extracurricular
- Scouting
- Work History
- Family History

Responses

Unit Record

Positive
- SOM / SOQ
- Promotion
- APFT/Rifle Qual

Negative
- UCMJ
- Chapter
- Medical Board

WholeSoldier Evaluation

Positive
- Character
- Motivation
- Thought
- Purpose

Negative
- Character
- Conduct

The Research Question

- ◆ **What attributes are statistically linked to poor performance?**

    - ◆ Failure to complete OSUT

    - ◆ WholeSoldier Performance Assessment Model (Character and Conduct)

    - ◆ Unit Recommendation of Removal (WholeSoldier Counseling)

    - ◆ APFT/Marksmanship Failure

    - ◆ Article 15/UCMJ Action in Unit

- ◆ **What attributes are statistically linked to excellence?**

    - ◆ Special Recognition in OSUT

    - ◆ Special Recognition in Unit (Soldier Boards, Promotion etc.)

    - ◆ APFT/Marksmanship Excellence

    - ◆ WholeSoldier Performance Assessment Model (Character, Motivation, Thought, Purpose)

Hypothetical WholeSoldier Application

♦ The outcome of this analysis is a series of **profiles**.

♦ Because of **measurement error** (accuracy/precision) on the response variables, it is **not possible to calculate the probability of poor performance** for a given profile.

♦ It is possible to calculate a **lower bound** of that probability using the **presumption of competence.**

♦ We can use that lower bound as a **profile risk score.**

Profile X
- Data Set of 1000
- 95 observations
- 45 "Poor Performers"

} Lower Bound of P(Poor|X) = 47%

Profile Y
- Data Set of 1000
- 150 observations
- 20 "Poor Performers"

} Lower Bound of P(Poor|Y) = 13%

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Profile X
- Data Set of 1000
- 95 observations
- 45 WholeSoldier Failures

} Lower Bound of P(Poor|X) = 47%

The hard part is identifying _statistically significant profiles_

Profile Y
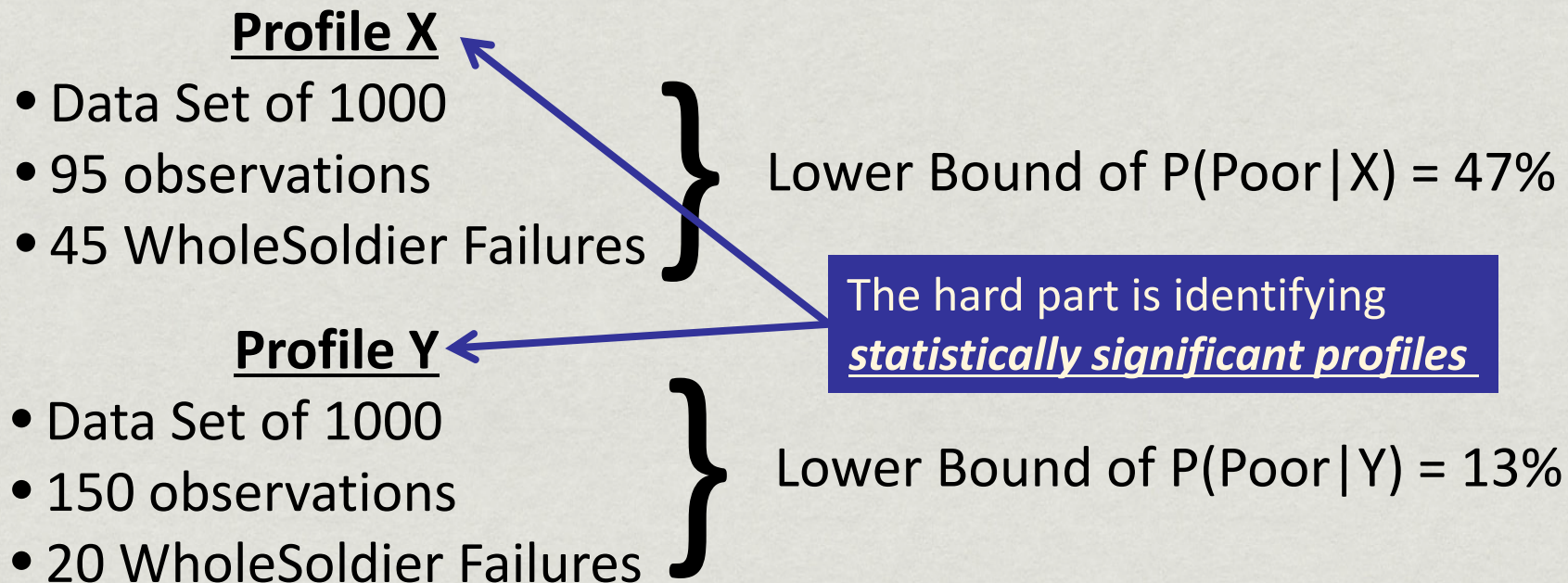- Data Set of 1000
- 150 observations
- 20 WholeSoldier Failures

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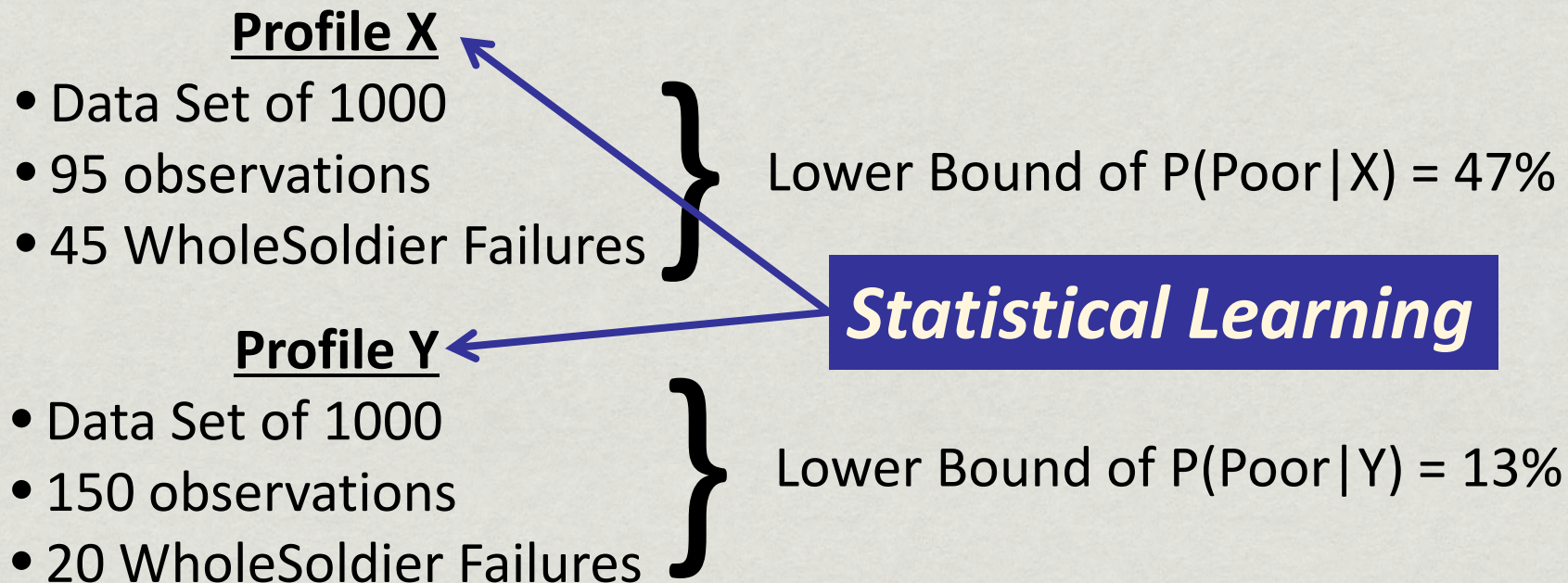### Profile X

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Statistical Learning

Profile Y

- Data Set of 1000
- 150 observations
- 20 WholeSoldier Failures

} Lower Bound of P(Poor|Y) = 13%

Questions/Discussion

1. *WholeSoldier* Performance Study (MAJ Dees)
*Problem: The Army needs a **holistic model** of Soldier performance in the **moral, cognitive, and physical domains.***

2. *WholeOfficer Performance Study* (Cadets)
*Problem: The Army needs a system to accurately **assess the performance of officers** in a **holistic manner** that provides **significant distinction**.*

3. *WholeCadet Performance Study* (Cadets)
*Problem: USMA needs a system to accurately **assess the performance of cadets** in a **holistic manner** that provides **significant distinction**.*

4. *WholeRecruit Potential to Performance Study* (MAJ Huddleston)
*Problem: The Army needs a **holistic model** of recruit potential **to predict WholeSoldier Performance**. The Army can establish **automated data-basing** of WholeSoldier Performance data that facilitates **longitudinal modeling** of WholeRecruit Potential to **provide strategic situational awareness** and **leading indicators**.*